

**THE EFFECTS OF WIDOWHOOD ON DISABLED
OLDER WOMEN (THE WOMEN'S HEALTH
AND AGING STUDY)***

JACQUELINE S. TELONIDIS, MS

DALE A. LUND, PH.D.

MICHAEL S. CASERTA, PH.D.

University of Utah, Salt Lake City

JACK M. GURALNIK, M.D., PH.D.

National Institute on Aging

JAMES L. PENNINGTON, JR.

Westat, Rockville, Maryland

ABSTRACT

This study examined the effects of becoming widowed for older women with pre-existing physical disability. Data from three consecutive interviews from the Women's Health and Aging Study (WHAS) were used to compare depression, quality of life, and functional difficulty for widowed and non-widowed women. The two groups of 24 women were matched by age, disability level, domains of disability, and race. Repeated measures of analyses of variance (ANOVAs) revealed that, for both groups, depression scores were low and remained relatively stable and they were satisfied with their quality of life at all three time points (T1 = 0-6 months pre-bereavement, T2 = 0-6 months bereaved, T3 = 6-12 months bereaved), with no significant group by time interaction effects. The two groups were no different on their levels of functional difficulty at T1 and T2 but by T3, surprisingly, the widows reported slightly less difficulty. Overall, the findings show that disabled women who became widows demonstrate a noticeable degree of resiliency and hardiness.

*This study was supported by contract N01-AG-1-2112 from the National Institute on Aging.

Over the past 20 years, there has been an increasing amount of research that documents the pervasive difficulties and adverse consequences associated with bereavement and widowhood (Stroebe, Hansson, Stroebe, & Schut, 2001). Similarly, there has been a growing body of research literature examining the challenges and impact of living with major physical disabilities (Guralnik, Fried, Simonsick, Kasper, & Lafferty, 1995). However, very little research knowledge is available regarding the coping and outcomes of those who experience both the loss of physical independence due to disability along with the loss of their spouse. It is likely that with continued increases in life expectancy there will be significant numbers of persons who will have the unfortunate experience of dealing simultaneously with both life circumstances. The purpose of this study is to examine the impact of becoming widowed among a sample of already physically disabled women to assess the combined effects of these losses on their daily lives and overall well-being.

BEREAVEMENT AND WIDOWHOOD

Although research findings are inconsistent on the effects of widowhood, it is undeniably a time of loss for both men and women. When men and women were compared in several studies, men showed greater depression following the death of a spouse than women (Lee, Willetts, & Seccombe, 1998; Stroebe & Stroebe, 1983, 1987; Umberson, Wortman, & Kessler, 1992). In a recent study, this gender difference was due primarily to the fact that married men were much less depressed than married women prior to widowhood (Lee, De Maris, Bavin, & Sullivan, 2001). Though widowed men and women were found to be comparatively depressed, widowed women were no more depressed than married women. In summary, Lee and colleagues determined that widowhood in women was not a significant predictor of subsequent depression. In other research, however, widowhood was been found to be a significant predictor of depression for both men and women (Carnelley, Wortman, & Kessler, 1999; Carr et al., 2000; Lund, Caserta, & Dimond, 1989). The death of a spouse can, in fact, permeate all aspects of the surviving spouse's present and future functioning and be severely disruptive to psychological health and balance (Campbell & Silverman, 1999). Widowed persons score lower on measures of psychological well-being than married persons (Fry, 2001; Lee et al., 1998; Stroebe & Stroebe, 1987; Stroebe, Stroebe, & Hansson, 1993; Umberson et al., 1992).

A number of studies have also found that the effects of widowhood are moderated by time (Lee et al., 1998; Mendes de Leon, Kasl, & Jacobs, 1994; Stroebe & Stroebe, 1987; Umberson et al., 1992) and that the recently widowed tend to have lower psychological well-being. In addition, those who became widowed reported, for two years following the loss, greater levels of depression than the non-bereaved (Carnelley et al., 1999; Lund, Caserta, & Dimond, 1989). Most studies have found that only 15–30% experience clinically significant depression

in the year following their spouse's death (Jacobs et al., 1989; Lund et al., 1985-1986; Mendes de Leon et al., 1994; Stroebe et al., 1993; Wortman & Silver, 1989; Zisook & Shuchter, 1991). In a study of elderly widows and widowers, 20% were categorized as presenting major depression, two months after bereavement, 20% were categorized as exhibiting minor depression, 11% were categorized as demonstrating subsyndromal depression or having any two symptoms from the DSM-IV symptom list, and 49% were categorized as having no depression (Zisook, Paulus, Shuchter, & Judd, 1997). The Changing Lives of Older Couples (CLOC) study evaluated the effect of widowhood on emotional well-being upon special occasions such as holidays, wedding anniversaries, and birthdays. Their findings revealed that widowed persons interviewed reported significantly higher levels of yearning, despair, grief-related anger, and depression on the special occasions other than birthdays (Carr & Utz, 2002). In another study of 2000 Swedish twins, those bereaved fewer than five years reported more depressive symptoms, more loneliness, and less life satisfaction when bereaved respondents were compared to their co-twin control. Women who had been bereaved long-term were significantly more lonely, less satisfied, and tended to be more depressed than their co-twin controls. In comparison, long-term bereaved men were found to be significantly more lonely than their co-twin controls, although there were no significant differences in life satisfaction or depression (Lichtenstein, Gatz, Pederson, Berg, & McClearn, 1996). Another interesting finding from this study was that respondents who later became widowed were found to have elevated depression scores when compared with married respondents. This finding indicates that many bereaved individuals experience depression before the death of a spouse, either because of anticipatory grief, caregiver burden, or other unknown reasons (Lichtenstein et al., 1996). Furthermore, the type or duration of illness experienced by the spouse prior to death may also account for variation in psychological adjustment among the bereaved (George & Gwyther, 1984; Norris and Murrell, 1987; Parkes & Weiss, 1983; Vachon et al., 1982).

Depression, even sub-threshold depression symptoms that are common in bereavement, produces impairments in measures of physical functioning, pain, and general health, along with decrements in emotional health (Broadhead, Blazer, George, & Tse, 1990; Bruce, Seeman, Merrill, & Blazer, 1994; Von Kroff, Ormel, Katon, & Lin, 1992; Wells et al., 1989). In addition, the onset of depressive symptoms can initiate a spiraling decline in physical and psychological health in older adults (Bruce et al., 1994; Penninx et al., 1998).

Widowhood increases the risk for mortality for men more than for women (Kaprio, Koskenvuo, & Rita, 1987). Mortality is highest among the bereaved who move into a chronic care facility, live alone, report having no one to whom they can telephone, and in general lack support systems (Stroebe & Stroebe, 1983). Widowhood also appears to be associated with subsequent declines in health more strongly for men than for women (Lee et al., 1998; Stroebe & Stroebe, 1987). A widow's health may actually be enhanced, because they are relieved

from the burdens of performing household tasks and emotional support to their spouses (Umberson et al., 1992). Widowhood, for older adults, often results in an immediate decrease in perceived health (Ferraro, 1985) with the exception of some women who show health benefits following bereavement due to greater access to supportive relationships (Umberson et al., 1992). Previous studies have shown a positive relationship between health and psychological well-being (Umberson et al., 1992; Zisook et al., 1994). In addition, several studies of bereaved individuals have found a relationship between factors such as social readjustment, stress, depression, and immuno-competence (Esterling, Kiecolt-Glaser, & Glaser, 1996; Hall et al., 1998; Irwin, Daniels, Bloom, Smith, & Weiner, 1987; Zisook et al., 1994). In one such study of older men and women with bereavement-related depression, bereavement-related stress was associated with decreases in numbers of circulating natural killer cells (Hall et al., 1998).

Widowhood has also been shown to cause loneliness and diminished interest in the activities surrounding eating, such as meal planning, shopping, and meal preparation (Rosenbloom & Whittington, 1993). Furthermore, it affected eating behaviors and nutrient intake. Bereaved individuals suffer elevated risks of depression, anxiety, and other psychiatric disorders, somatic complaints and infections, and a variety of other physical illnesses (Stroebe et al., 2001). Dynamic fluctuations of physiologic systems in response to stressors such as bereavement lead to declines in cognitive and physical functioning in older adults (Seeman, Singer, Rowe, Horwitz, & McEwen, 1997). Although it is still debatable which subgroup of bereaved individuals are most vulnerable, the health of bereaved people in general is at risk when compared to the non-bereaved (Stroebe et al., 2001). There is no longer any doubt that the costs of bereavement in terms of health can be severe.

Research findings differ on the long-term effects of widowhood on life satisfaction. For individuals who experienced the loss of a spouse, a decline in life satisfaction, over a seven-year period, was found for both men and women (Chipperfield & Havens, 2001). Although some symptoms lessen over time, many bereaved individuals continue to experience distressing symptoms, painful memories, and impaired quality of life for several years following their loss (Lichtenstein et al., 1996). Likewise, an initial effect of widowhood on life satisfaction was also found (Lund, Caserta, & Dimond, 1989), although mean life satisfaction scores for the bereaved were nearly identical to the non-bereaved two years later. The authors concluded that life satisfaction is relatively unaffected by the death of a spouse for older adults.

In current cohorts of older adults, men receive substantially more instrumental advantages from marriage than do women, generally in the form of household tasks (Hartman, 1981; Miller & Garrison, 1982). After widowhood, women's hours of domestic labor decrease but men's hours increase (Umberson et al., 1992; Utz & Reidy, 2001). This gender difference is due, in part, to the fact that adult children are more likely to assist their widowed mothers than their widowed

fathers with household tasks following spousal loss (Utz & Reidy, 2001). To date there is no consensus on whether adjusting to the death of a spouse is worse for women (Aiken, 1995) or worse for men (Lee et al, 1998; Stroebe & Stroebe, 1983). Women's presumed specialization in the social and emotional realm has been viewed as an important advantage for their adaptation to widowhood (Ferraro, 1989; Rowe & Kahn, 1987). However, women have been socialized to be more dependent than men (Stroebe & Stroebe, 1983; Arbuckle & de Vries, 1995). Bereaved individuals who said that they were deficient in abilities to accomplish some tasks indicated that their deficiencies had made the adjustment process more difficult (Lund, Caserta, Dimond, & Shaffer, 1989). Competence with tasks of daily living can reduce the negative impact of a loss (Lund, Caserta, & Dimond, 1993). When a spouse dies, the survivor must not only adjust to the loss of a close relationship, but also manage the daily decisions and responsibilities that were once shared by both spouses (Wortman, Kessler, & Umberson, 1992). Those who were not dependent on their spouses presumably are better able to care for themselves and maintain their households successfully following the loss of their spouse (Carr et al., 2000). The way individuals felt about themselves and how skilled they were in managing tasks of daily living such as maintaining a house, paying bills, and knowing how to access resources significantly influenced how effectively they adjusted to the loss (Lund, 1996). Those who fail to acquire new skills are at greater risk for long-term mental and physical health problems (Lund, Caserta, Dimond, & Shaffer, 1989).

Although the loss of one's partner may be associated with elevated sadness and depression, anxiety may instead be a reaction to the major changes in daily responsibilities and burdens (Carr et al., 2000). Findings showed that the effect of widowhood on anxiety levels varies by how much one depended on one's spouse for performing male-typed tasks, such as home repair and financial management. In other words, dependence on a spouse for male-typed tasks would be a stronger predictor of anxiety for women (Carr et al., 2000). If families are arranged so that one's spouse is the primary, or only, care provider, then the loss of this spouse of instrumental support may be distressing (Lopata, 1973). Compared with the married controls, widowed persons who reported high levels of dependence on their spouse had significantly higher levels of anxiety at follow-up (Carr et al., 2000).

The purpose of this study is to examine the effects of widowhood on depression, quality of life, and functioning for women with disabilities. Data for this investigation come from the Women's Health and Aging Study, a prospective study of moderately to severely disabled older women living in the Baltimore, Maryland area. These data enabled us to examine changes in depression, quality of life, and functional difficulty status attributed to bereavement relative to pre-bereavement levels by comparing those who became widowed during the study to those who remained married. These three outcome measures were selected because they reflect important aspects of people's lives that are often

impacted by loss situations. Stroebe and Stroebe (1983) have found that because women have higher rates of depression and self-reported distress than men, within-gender control groups are needed to evaluate potential effects of bereavement on mental health dimensions. Also, adequate control groups are needed to assess differences in life satisfaction, depression, mortality, or other outcomes following bereavement. No other previous studies have specifically examined the effects of widowhood on a moderately to severely disabled population of older women living in the community. This study not only examines the combined effects of widowhood and disability but also uses prospectively collected data for those who become widowed and their matched controls.

METHODS

WHAS Study Design

This study uses data from two specialized subsamples of the Women's Health and Aging Study (WHAS), which examined the causes and course of disability among moderately to severely disabled, cognitively intact older women living in the community (Guralnik et al., 1995). The larger study used an age-stratified random sample of community-dwelling women age 65 years and older selected from residents of the eastern half of Baltimore City and a small part of Baltimore County. Initially, 5,316 women were randomly sampled from the Medicare beneficiaries in Baltimore, Maryland. From this sample, 1,409 meet the study's eligibility criteria for cognitive awareness, assessed by the Mini-Mental State Examination (MMSE), and disability (described below). Ultimately, 1,002 women or 71% of those eligible agreed to participate in the study.

Disability, in the WHAS screening process, was assessed by self-report of difficulty in 15 activities, organized into the following four domains: mobility and exercise tolerance (walking a $\frac{1}{4}$ mile, walking up 10 steps without resting, getting in and out of bed or chairs, doing heavy housework); upper extremity abilities (raising arms over head, using fingers to grasp or handle, lifting or carrying 10 lbs.); basic self-care (bathing, dressing, eating, using the toilet); and higher functioning tasks of independent living (using the telephone, doing light housework, preparing meals, shopping for personal items). For each activity listed, participants were asked if they had any difficulty doing the activity by themselves without help from another person or special equipment. Women who had difficulty performing at least one task in each of two or more domains, and who were not severely cognitively impaired (scored more than 17 on the MMSE) were eligible to participate in the WHAS.

The domain approach was used in the WHAS to select a moderately to severely disabled study population. This approach was derived from a previous study in which factor analyses indicated a clustering of difficulty with certain tasks, whereas difficulty with one task was associated with difficulty with other tasks in

the group (Fried et al., 1994). The domain approach allowed for screening women with less common patterns of disability into the study. Previous approaches to screening for disabilities have focused on difficulties with mobility or self-care alone. Using the domain approach, participants in the WHAS represent the one-third most disabled women living in the community. Study participants were interviewed every six months over a three-year time frame. For more information regarding the WHAS refer to the WHAS Monograph by Guralnik, Fried, Simonsick, Kasper, and Lafferty (1995).

Widowhood Study Design

This study was designed to address two areas of need in bereavement research. Namely, the need for adequate control groups and time-series designed studies, which include pre-bereavement interviews, to assess differences in life satisfaction, depression, mortality, and other outcomes following bereavement. Prospectively collected data was used to assess changes over time in functional and psychological outcomes for those who became widowed, relative to pre-bereavement levels, as well as for those who remained married. For this investigation three consecutive interviews, with an interval of six months between each interview, were used to compare two groups of women. The first group consisted of 24 study participants who became widowed during the course of the study. The second group, or comparison group, consisted of 24 women who remained married. Women in the comparison group were matched to those in the first group by race, disability level (severity), and domains of disability (type) (see Study Sample Matching Variables for more detail). Also, matches from the comparison group were either the same age or up to seven years older than women from the first group except for three widows age 85+, whose controls were up to 9 years younger. Responses from the recently widowed women's group were examined from: 1) the interview prior to becoming widowed, or Time 1; 2) the interview at which they first reported being widowed, or Time 2; and 3) the interview directly following bereavement, or Time 3. At Time 2, women in the first group were widowed within the past six months. By Time 3 these women had been bereaved between 6 and 12 months.

Study Sample Matching Variables

Disability Level

Disability level was controlled for in this study because no other previous study had examined the effect of widowhood on a population of disabled persons. For matching purposes only, disability was categorized into four levels, listed in decreasing severity: a) having a lot of difficulty or unable to perform one or more ADL, such as bathing dressing, eating, using the toilet, and getting in and out of bed or chairs; b) having little to some difficulty with one or more ADL; c) having

no difficulty with ADL's, but having difficulty with at least two tasks, such as using one's fingers to grasp or handle, walking up 10 steps without resting, and preparing meals (Simonsick, Kasper, & Phillips, 1998); and d) having no difficulty with any activity. The four conditions for the corresponding variable, for disability level, were: 0 = No difficulty with any activity; 1 = No ADL difficulty, but some difficulty in other tasks, 2 = A little/some ADL difficulty, and 3 = A lot difficulty or unable to perform an ADL.

Domains of Difficulty

The two groups of women also were matched by domains of disability in addition to severity. Related tasks were categorized into the following four domains (described in detail in the WHAS Study Design section): self care, upper extremity, mobility, and higher functioning for independent living in the community. Each of the four domains had a corresponding variable which was coded as "1" when a respondent indicated difficulty with any activity within a domain, or "0" when no difficulty was reported within a particular domain.

Study Sample Characteristics

Due to the matching procedures, the mean disability level, for both groups of women at Time 1, was 1.8 ($SD = .9$). Also, the women in both samples had identical distribution on the disability levels and ADL, IADL, upper extremity, and mobility domain variables. As Table 1 indicates, 4.2% of the women from both groups were categorized at disability level = 0; 41.7% at level = 1; 25.0% at level = 2; and 29.2% at level = 3. Furthermore, 37.5% of the women, from each group, reported difficulty with at least one self care activity, such as bathing, dressing, or eating; 41.7% reported difficulty with at least one IADL, such as shopping, light housework, and using the telephone; 79.2% reported difficulty with at least one upper extremity activity, such as raising arms over head, grasping or handling, and lifting 10 lbs.; and 95.8% reported difficulty with at least one mobility activity, such as heavy housework, getting in and out of bed or chairs, and walking a quarter mile. In each group, 62.5% of the women were white and 37.5% were black. The mean age for the widowed group was 75.0 ($SD = 7.5$). The mean age for the comparison group was 75.7 ($SD = 6.5$).

Participants in the WHAS were asked the highest grade, or number of years, of education they completed. From the widowed women subsample, 37.5% had less than a ninth grade education, 16.7% reported that they had completed High School or had received their GED's, and 29.2% had more than a H.S. education. For our non-widowed sample, 37.5% also reported less than a ninth grade education, 12.5% reported that they had completed High School or had received their GED's, and 25% had more than a H.S. education. Participants were also asked to identify their income group. The matching procedures resulted in having the women from the widowed group and the comparison group being highly

Table 1. Control Variables Including Disability Patterns for Widows and Non-Widows

Variable/Group	Frequency	Percent
Race		
White	15	62.5
Black	9	37.5
Disability level		
0 = No difficulty	1	4.2
1 = No ADL difficulty	10	41.7
2 = A little/Some ADL diff.	6	25.0
3 = A lot/Unable ADL diff.	7	29.2
Self care domain		
1 = Yes	9	37.5
0 = No	15	62.5
IADL domain		
1 = Yes	10	41.7
0 = No	14	58.3
Upper extremity domain		
1 = Yes	19	79.2
0 = No	5	20.8
Mobility domain		
1 = Yes	23	95.9
0 = No	1	4.2

similar with respect to education and income. *T* tests performed on age, education, and income revealed no statistically significant group differences.

MEASURES

Outcome Variables

Depression

Depression was measured in the WHAS by the 30-item Geriatric Depression Scale (GDS) (Yesavage et al., 1983). The GDS is preferable for use with chronically ill and disabled persons, since only one item deals with somatic symptoms. The questions in the GDS require yes or no responses, which are summed for a

total score ranging from 0 to 30, with high scores indicating greater depressive symptomatology. Scores less than 10, on the GDS scale, indicate low or no depressive symptomatology (Norris, Gallagher, Wilson, & Winograd, 1987). Scores of 14 or above indicate moderate to high levels of depressive symptomatology. The GDS score was a sum of the items answered when only one to four items were missing and the remaining items added up to less than 18. If one to four items were missing and the remaining items added up to 18 or greater, then the missing items were interpreted as being indicative of depression and given the value of "1" toward the total score. Finally, if more than five items were missing, then the GDS score was set to missing.

Quality of Life

For the WHAS, quality of life was measured using the Perceived Quality of Life Scale (PQOL). The PQOL scale consisted of 20 items and measured satisfaction with a broad range of life domains, including physical, psychological, and social. These items were drawn from a much broader and widely used instrument, the Sickness Impact Profile (Bergner, Bobbit, Carter, & Gilson, 1981). For 19 of the items in the PQOL instrument, respondents indicated their level of satisfaction on the scale ranging from 0 (extremely dissatisfied) to 10 (extremely satisfied). For the remaining item in the PQOL scale, respondents indicated their level of happiness from 0 (extremely unhappy) to 10 (extremely happy). The PQOL score was calculated as an average of the sum of the items answered and ranged from 0 to 10. If five or more items were missing, then the PQOL score was considered missing. Finally, the 11-point scale (0–10) for the PQOL score was categorized as follows: dissatisfied (0–3), neutral (4–6), and satisfied (7–10).

Functional Difficulty Status

This third outcome variable was measured by assessing the amount of functional difficulty reported for 20 activities, which corresponded to several areas of functioning. The questions on physical functioning were drawn from a number of sources (Fried, Kasper, Simonsick, & Zeger, 1995). Questions about activities of daily living (ADLs) were based on a modified version of the Activities of Daily Living Scale (Katz, Ford, Moskowitz, Jackson, & Jaffe, 1963). The questions on instrumental activities of daily living (IADLs) were adapted from the work of Lawton and Brody (1969). Questions on mobility (walking specific distances, walking up or down stairs) and ability to perform heavy housework were adapted from the Roscow and Breslau scale (1966). The question of lifting or carrying 10 pounds was from the physical function scale developed by Nagi (1976). In the end, a Functional Difficulty score was calculated as the average level of difficulty reported for all 20 activities, ranging from 0.0 (no difficulty) to 4.0 (high difficulty or unable to do activities).

RESULTS

Table 2 contains the results of repeated measures of analyses of variance (ANOVAs) conducted over the three time points for the three outcome measures, depression, quality of life, and functional difficulty, for both the widowed and non-widowed groups. Both the widowed and non-widowed groups reported mean scores within a normal, non-depressed range at each time point. Women who became widowed did report slightly higher levels of depression at Time 1 than the comparison group, although the results were not statistically significant. Depression scores remained relatively stable over time for both groups, as the group by time effect was not statistically significant. Likewise, the values in the table also indicate that both groups were satisfied with their quality of life at all three time points with no significant group by time interaction effect.

Finally, both groups of women reported low levels of functional difficulty at all three time points. A noteworthy finding is that, although the two groups of women reported essentially similar levels of functional difficulty both at baseline and the Time 2 follow-up, the two groups diverge from each other by Time 3 ($p = .06$), which corresponds to 6 to 12 months of bereavement for the widowed group. Figure 1 illustrates the nature of these changes. The functional difficulty level at Time 3 for the non-widows shows increasing difficulty, while the level for the

Table 2. Repeated Measures Analyses of Variance of Outcome Measures: Depression, Quality of Life, and Functional Difficulty. Comparisons between Widowed and Non-Widowed Groups Across Three Time Points from Baseline to 6–12 Months Post Bereavement

Outcomes/Group	Time 1		Time 2		Time 3		Effects (<i>F</i> -ratio)		
	M	(SD)	M	(SD)	M	(SD)	Group	Time	Group × Time
Depression									
Widowed	7.6	4.4	7.6	5.8	6.1	5.0	.15	1.53	.99
Married	6.1	4.9	7.1	4.1	6.5	5.6			
Quality of life									
Widowed	7.5	1.4	7.7	1.3	7.7	1.4	.02	.23	.14
Married	7.6	1.5	7.6	1.3	7.6	1.6			
Functional difficulty									
Widowed	.7	.6	.8	.5	.7	.5	1.03	.49	2.86*
Married	.8	.6	.8	.6	1.0	.6			

* $p = .06$

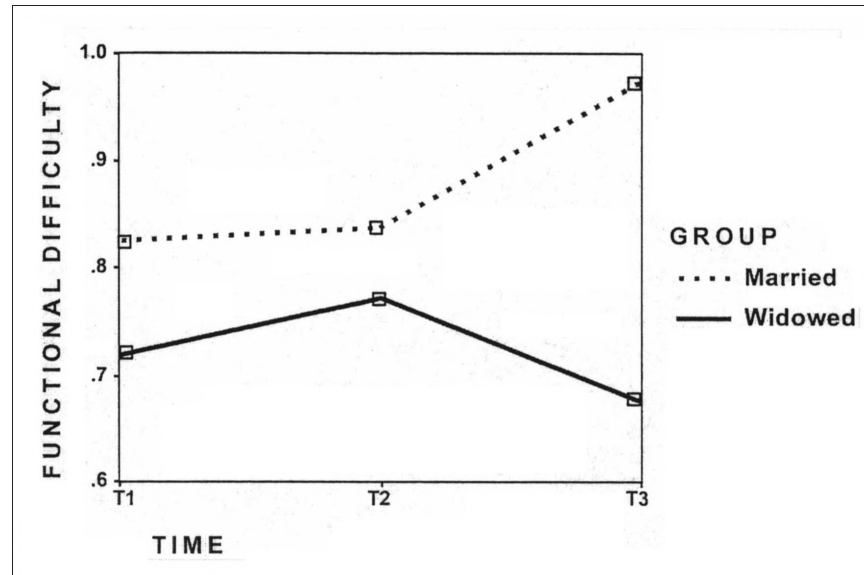


Figure 1. Profile plot showing group \times time effect for average functional difficulty score means.

widows decreases. A test for within-subjects contrasts, between T2 and T3, was statistically significant ($F = 5.61, p < .05$). Although the observed power for this analysis was low (approximately .5), a pattern appears quite clear indicating a strong trend, and a statistically significant effect may be found given a larger sample size.

DISCUSSION

The major conclusion of this study is that widowhood did not have the detrimental impact on the outcome measures used in this study as has been found in previous studies of widowhood. First, and perhaps one of the most important conclusions from our study, was that widowed disabled women were found to be no more depressed than married disabled women. Widowed women were found to have comparable scores on depression when compared with non-widows. This contradicts a number of studies which have found that widowed persons score lower on measures of psychological well-being than married persons (Fry, 2001; Lee et al, 1998; Stroebe & Stroebe, 1987; Stroebe, Stroebe, & Hansson, 1993; Umberson et al., 1992). Contrary to several studies that found the effects of widowhood on depression were moderated by time (Carnelley et al., 1999; Lee et al., 1998; Lund, Caserta, & Dimond, 1989; Mendes de Leon et al., 1994;

Stroebe & Stroebe, 1987; Umberson et al., 1992) we found that depression scores remained relatively low and stable over the three time periods. Furthermore, pre-bereavement depression levels were also similar to those of the non-widowed group. Likewise in another study, the most frequent bereavement adjustment pattern was not one of elevated depression initially with gradual declines overtime, but rather a pattern of stable, low depression scores or a pattern of resiliency overtime (Bonanno et al., 2002). Not surprisingly, we also found that women who became widowed were more likely than the comparison group to have had a husband whose general health was poorer at Time 1 ($t = 4.97, p < .001$). Depression levels, however, for these women did not appear to be affected by having an ill spouse prior to bereavement as was found in previous studies (George & Gwyther, 1984; Norris & Murrell, 1987; Parkes & Weiss, 1983; Vachon et al., 1982).

Second, also somewhat surprising was that quality of life scores showed that both groups of women were quite satisfied with their lives and their levels of satisfaction remained stable over time. In addition, there was no initial bereavement effect on quality of life as has been found in previous studies (Chipperfield & Havens, 2001; Lichtenstein et al., 1996). Our findings were consistent with another study that found that life satisfaction is relatively unaffected by bereavement (Lund, Caserta, & Dimond, 1989).

Third, we found less functional difficulty among the widowed group at Time 3 rather than a worsening in functioning. Conversely, functional difficulty for the non-widowed group worsened at Time 3 producing a borderline statistical effect ($p = .06$). One way to interpret this difference is perhaps that many of the widows had been caregivers prior to their husbands' deaths. When they became widowed, the physical demands of caregiving were gone and their levels of functioning might have improved with more rest and attention to their own problems. One study that supports this possibility showed that a widow's health may actually be enhanced when they are relieved from the burdens of performing household tasks and emotional support to their spouses (Umberson et al., 1992). Whereas, the increase in difficulty among the non-widows may indicate a natural progression of their existing disability toward more problems over time. It would be worthwhile to know in future research whether or not the difference in functioning between the two groups would be sustained beyond the first year of bereavement.

Overall, our findings seem to indicate a high degree of resiliency among older women already coping with physical limitations given that experiencing a tragic life event did not produce a worsening of depression, quality of life, or functional difficulty. In another recent study of older bereaved widows it was noted that experiencing positive daily emotions resulted in decreased stress and depression and resiliency (Ong, Bergeman, & Bisconti, 2004). It might be possible that these women had learned effective coping strategies to deal with their physical disabilities and were able to apply them to coping with widowhood. Included in their coping skills might be practical ways to continue physical functioning, within their limitations, and also a psychological sense of "hardiness" that serves to

buffer other difficult life transitions (Magai, Consedine, King, & Gillespie, 2003). In fact, a recent study of disabled older adults found that these men and women often continued providing significant amounts of affective and instrumental support to their relatives and friends rather than always being recipients of help from others (Boerner & Reinhardt, 2003). Additional qualitative data might be helpful in explaining the potential role of hardiness in the coping process.

Based upon the eligibility criteria of three consecutive interviews, including a pre-bereavement interview, our study was limited by the fact that a majority of the women who participated in the WHAS were widowed prior to the study. Despite the constraints of our small sample size, a clear trend towards improved functional ability was discovered for those who became bereaved. Nonetheless, future research is needed to confirm this finding with a larger and more representative sample. Furthermore, we do not suggest that widowed women, coping with functional limitations, are not in need of support. On the contrary, we suggest that additional attention needs to be directed to those who are coping with functional limitations and are still married.

Although the use of the WHAS dataset is a unique strength of this study in terms of having pre-bereavement assessments and a matched control group of non-widowed women, there are also two cautionary concerns that should be noted. First, the study sample is small due to the low percentages of women who became widowed during the three-year study period. This limits some of the potential statistical analyses that could be performed and the generalizability of the study findings. Second, some of the typical outcome and control variables in bereavement research studies were not included in the WHAS dataset because the focus of the study was not on bereavement or widowhood. Therefore, we instead focused on outcomes such as depression and quality of life and were not able to examine bereavement control variables such as location of the death, sudden versus expected loss, and the relationship with the deceased. The trade-offs between the study limitations and strengths still allow the findings to uniquely contribute to the existing literature, particularly in understanding the combined effects of disability and widowhood.

Interventions

Several studies have found that widowhood adversely affects mental health and general well-being (Carr et al., 2000; Chipperfield & Havens, 2001; Lee et al., 1998; Lichtenstein et al., 1996; Stroebe & Stroebe, 1987; Stroebe, Stroebe, & Hansson, 1993; Umberson et al., 1992). Drawing from these conclusions, clinicians and service providers may assume that most older bereaved persons are depressed, less satisfied, and incapacitated by their loss and that these effects are a natural course of widowhood. Our findings do not support these assumptions, although some bereaved persons experience depression, less satisfaction with life, and are incapacitated. Rather, our findings suggest that many older bereaved

adults experience low or no depressive symptomatology and are generally satisfied with their lives. Taking our findings into account, we suggest that clinicians and other health service providers should first accurately assess the psychological well-being among disabled widows rather than assume that they are depressed, or not satisfied with life, and in need of professional services. At greatest risk are widows who are depressed or not satisfied with life, but are overlooked by providers who assume that depression is a natural course of widowhood.

It also has been well documented that depression can lead to adverse health (Broadhead, Blazer, George, & Tse, 1990; Bruce et al., 1994; Von Kroff et al., 1992; Wells et al., 1989) so it is imperative to provide professional services to those who have the need. Therefore, health professionals who see older adults should add assessments for depression and general well-being to their physical health evaluations to ensure accurate information about the overall health status of each person.

In a review of the literature, Coombs (1991) found that married people lived longer and were generally more emotionally and physically healthy compared with unmarried individuals. Furthermore, husbands and wives offer day-to-day companionship to each other, and they often provide care when one partner needs assistance. As a consequence, older people who are married are less likely to be institutionalized than those who are single (Treas & Longino, 1997). These findings have motivated a belief that being married buffers against poor health. Contrary to this belief, we found that the women who remained married experienced a worsening in day-to-day functioning, while the widowed showed improved functioning. This assumption may cause older individuals who are still married and in serious need to be overlooked. Home health professionals and service providers should evaluate older individuals as "individuals" and not simply on the basis of their marital status.

ACKNOWLEDGMENT

This article is dedicated in memory of Donna Davis, M.A., Senior Study Director for the WHAS, Westat, Rockville, Maryland.

REFERENCES

- Aiken, L. R. (1995). *Aging: An introduction to gerontology*. Thousand Oaks, CA: Sage.
- Arbuckle, N. W., & de Vries, B. (1995). The long term effects of late-life spousal and parental bereavement on personal functioning. *The Gerontologist*, 35, 637-647.
- Bergner, M., Bobbit, R. A., Carter, W. B., & Gilson, B. S. (1981). The Sickness Impact Profile: Development and final review of a health status measure. *Medical Care*, 19, 787-805.

Boerner, K., & Reinhardt, J. P. (2003). Giving while in need: support provided by disabled older adults. *Journal of Gerontology*, 58B(5), S297-S304.

Bonnano, G., Wortman, C., Lehman, D., Tweed, R., Haring, M., Sonnega, J., Carr, D., & Neese, R. (2002). Resilience to loss and grief: A prospective study. *Journal of Personality and Social Psychology*, 83(5), 1150-1164.

Broadhead, W. E., Blazer, D. G., George, L. K., & Tse, C. K. (1990). Depression, disability days, and days lost from work in a prospective epidemiologic survey. *Journal of the American Medical Association*, 264, 2524-2528.

Bruce, M. L., Seeman, T. E., Merrill, S. S., & Blazer, D. G. (1994). The impact of depressive symptomatology on physical disability: MacArthur studies of successful aging. *American Journal of Public Health*, 84, 1796-1799.

Campbell, S., & Silverman, P. R. (1999). *Widowers: When men are left alone*. Amityville, NY: Baywood.

Camelley, K. B., Wortman, C. B., & Kessler, R. C. (1999). The impact of widowhood on depression: Findings from a prospective study. *Psychological Medicine*, 29, 1111-1123.

Carr, D., House, J. S., Kessler, R. C., Randolph, M. N., Sonnega, J., & Wortman, C. (2000). Marital quality and psychological adjustment to widowhood among older adults: A longitudinal analysis. *Journal of Gerontology: Social Sciences*, 55B(4), S197-S207.

Carr, D., & Utz, R. (2002). Late-life widowhood in the United States: New directions in research and theory. *Aging International*, 27(1), 65-88.

Chipperfield, J. G., & Havens, B. (2001). Gender differences in the relationship between marital status transitions and life satisfaction in later life. *Journal of Gerontology: Psychological Sciences*, 56B(3), P176-P186.

Coombs, R. (1991). Marital status and personal well-being: A literature review. *Family Relations*, 40, 97-102.

Estlerling, B. A., Kiecolt-Glaser, J. K., & Glaser, R. (1996). Psychosocial modulation of cytokine-induced natural killer cell activity in older adults. *Psychosomatic Medicine*, 58, 264-272.

Ferraro, K. F. (1985). The effect of widowhood on the health status of older persons. *International Journal on Aging and Human Development*, 21(1), 9-25.

Ferraro, K. F. (1989). Widowhood and health. In K. S. Markides, & C. M. Cooper (Eds.), *Aging, stress, and health* (pp. 69-83). New York: John Wiley and Sons.

Fried, L. P., Ettinger, W. H., Hermanson, B., Newman, A. B., & Gardin, J. (1994). Physical disability in older adults: A physiological approach. *Journal of Clinical Epidemiology*, 47, 747-760.

Fried, L. P., Kasper, J. D., Simonsick, E. M., & Zeger, S. C. (1995). Disability: The spectrum of function in moderately to severely disabled older women. In J. M. Guralnik, L. P. Fried, E. M. Simonsick, J. D. Kasper, & M. E. Lafferty (Eds.), *The Women's Health and Aging Study: Health and social characteristics of older women with disability* (pp. 19-27). Bethesda, MD: National Institute on Aging, NIH Pub. 95-4009.

Fry, P. S. (2001). The unique contribution of key existential factors to the prediction of psychological well-being of older adults following spousal loss. *The Gerontologist*, 41(1), 69-81.

George, L., & Gwyther, L. (1984). The dynamics of caregiving burden: Changes in caregiver well-being overtime. *The Gerontologist*, 26, 253-259.

Guralnik, J. M., Fried, L. P., Simonsick, E. M., Kasper, J. D., & Lafferty, M. E. (Eds.). (1995). *The Women's Health and Aging Study: Health and social characteristics of older women with disability*. Bethesda, MD: National Institute on Aging, NIH Pub. 95-4009.

Hall, M., Baum, A., Buysse, D. J., Prigerson, H. G., Kupfer, D. J., & Reynolds, C. F. (1998). Sleep as a mediator of the stress-immune relationship. *Psychosomatic Medicine*, 60, 48-51.

Hartman, H. I. (1981). The family as the locus of gender, class and political struggle: The example of housework. *Signs*, 6, 366-369.

Irwin, M., Daniels, M., Bloom, E. T., Smith, T. L., & Weiner, H. (1987). Life events, depressive symptoms, and immune function. *American Journal of Psychiatry*, 144, 437-441.

Jacobs, S., Hansen, F., Berkman, L., Kasl, S., & Ostfeld, A. (1989). Depressions of bereavement. *Comprehensive Psychiatry*, 31, 218-224.

Kaprio, J., Koskenvuo, M., & Rita, H. (1987). Mortality after bereavement: A prospective study of 95,647 widowed persons. *American Journal of Public Health*, 77, 283-287.

Katz, S., Ford, A. B., Moskowitz, A. W., Jackson, B. A., & Jaffe, M. W. (1963). Studies of illness in the aged. The index of ADL: A standardized measure of biological and psychological function. *Journal of American Medical Association*, 185, 914-919.

Lawton, M. P., & Brody, E. M. (1969). Assessment of older people: Self-maintaining and instrumental activities of daily living. *The Gerontologist*, 9, 179-186.

Lee, G. R., DeMaris, A., Bavin, S., & Sullivan, R. (2001). Gender differences in the depressive effect of widowhood in later life. *Journal of Gerontology: Social Sciences*, 56B(1), S56-S61.

Lee, G. R., Willetts, M. C., & Seccombe, K. (1998). Widowhood and depression: Gender differences. *Research on Aging*, 20, 611-630.

Lichtenstein, P., Gatz, M., Pederson, N. L., Berg, S., & McClearn, G. E. (1996). A co-twin control study of response to widowhood. *Journal of Gerontology: Series B, Psychological Sciences & Social Sciences*, 51, 279-289.

Lopata, H. Z. (1973). *Widowhood in an American city*. Cambridge, MA: Schenkman.

Lund, D. A. (1996). Bereavement and loss. In J. E. Birren (Ed.), *Encyclopedia of gerontology* (Vol. 1; pp. 173-183). San Diego, CA: Academic Press, Inc.

Lund, D. A., Caserta, M. S., & Dimond, M. F. (1993). The course of spousal bereavement in later life. In M. S. Stroebe, W. Stroebe, & R. O. Hansson (Eds.), *Handbook of bereavement: Theory, research, and intervention* (pp. 240-254). New York: Cambridge University Press.

Lund, D. A., Caserta, M. S., & Dimond, (1989). Impact of spousal bereavement on the subjective well-being of older adults. In D. A. Lund (Ed.), *Older bereaved spouses: Research with practical applications* (pp. 3-15). New York: Taylor & Francis/Hemisphere.

Lund, D. A., Caserta, M. S., Dimond, M. F., & Shaffer, S. K. (1989). Competencies, tasks of daily living, and adjustments to spousal bereavement in later life. In D. A. Lund (Ed.), *Older bereaved spouses: Research with practical applications* (pp. 135-152). New York: Taylor & Francis/Hemisphere.

Lund, D. A., Dimond, M. F., Caserta, M. S., Johnson, R. J., Poulton, J. L., & Connelly, J. R. (1985-1986). Identifying elderly with coping difficulties after two years of bereavement. *Omega*, 16, 213-224.

- Magai, C., Consedine, N. S., King, A. R., & Gillespie, M. (2003). Physical hardiness and styles of socioemotional functioning in later life. *Journal of Gerontology: Psychological Sciences*, 58B(5), P269-P279.
- Mendes de Leon, C. F., Kasl, S. V., & Jacobs, S. (1994). A prospective study of widowhood and changes in symptoms of depression in a community sample of the elderly. *Psychological Medicine*, 24(3), 613-624.
- Miller, J., & Garrison, H. H. (1982). Sex roles: The division of labor at home and in the workplace. *Annual Review of Sociology*, 8, 237-262.
- Nagi, S. Z. (1976). An epidemiology of disability among adults in the United States. *Milbank Memorial Fund Quarterly*, 54, 439-467.
- Norris, F. H., & Murrell, S. A. (1987). Older adult family stress and adaptation before and after bereavement. *Journal of Gerontology*, 42, 606-612.
- Norris, J. T., Gallagher, D., Wilson, A., & Winograd, C. H. (1987). Assessment of depression in geriatric medical outpatients: The validity of two screening measures. *Journal of the American Geriatric Society*, 35, 989-995.
- Ong, A. D., Bergeman, C. S. & Bisconti, T. L. (2004). The role of daily positive emotions during conjugal bereavement. *Journal of Gerontology*, 59B(4), P168-P176.
- Parkes, C. M., & Weiss, R. S. (1983). *Recovery from bereavement*. New York: Basic Books.
- Penninx, B. W., Guralnik, J. M., Ferrucci, L., Simonsick, E. M., Deeg, D. J., & Wallace, R. B. (1998). Depressive symptoms and physical decline in community-dwelling older persons. *Journal of American Medical Association*, 279(21), 1720-1726.
- Roscow, I., & Breslau, N. (1966). A Guttman health scale for the aged. *Journal of Gerontology*, 21, 556-559.
- Rosenbloom, C. A., & Whittington, F. J. (1993). The effects of bereavement on eating behaviors and nutrient intakes in elderly widowed persons. *Journal of Gerontology: Social Sciences*, 48, S223-S229.
- Rowe, J. W. & Kahn, R. L. (1987). Human aging: Usual and successful. *Science*, 237, 433-440.
- Seeman, T. E., Singer, B. H., Rowe, J. W., Horwitz, R. I., & McEwen, B. S. (1997). Price of adaptation—Allostatic load and its health consequences—MacArthur studies of successful aging. *Archives of Internal Medicine*, 157, 2259-2268.
- Simonsick, E. M., Kasper, J. D., & Phillips, C. L. (1998). Physical disability and social interaction: Factors associated with low social contact and home confinement in disabled older women. *Journal of Gerontology: Social Sciences*, 53B(4), S209-S217.
- Stroebe, M. S., Hansson, R. O., Stroebe, W., & Schut, H. (Eds.). (2001). *Handbook of bereavement research: Consequences, coping, and care*. American Psychological Association, Washington, DC.
- Stroebe, M. S., & Stroebe, W. (1983). Who suffers more? Sex differences in health risks of the widowed. *Psychological Bulletin*, 93(2), 279-301.
- Stroebe, M. S., & Stroebe, W. (1987). *Bereavement and health*. New York: Cambridge University Press.
- Stroebe, M. S., Stroebe, W., & Hansson, R. O. (Eds.). (1993). *Handbook of bereavement: Theory, research, and intervention*. New York: Cambridge University Press.
- Treas, J., & Longino, C. F. (1997). Demography of aging in the United States. In K. F. Ferraro (Eds.), *Gerontology: Perspectives and issues* (pp. 19-50). New York: Springer Publishing Company, Inc.

Umberson, D., Wortman, C. B., & Kessler, R. C. (1992). Widowhood and depression: Explaining long-term gender differences in vulnerability. *Journal of Health and Social Behavior*, 33, 10-24.

Utz, R., & Reidy, E. (2001). *Changes in housework following widowhood: Gender differences and dependence on children*. Paper presented at the Population Association of America Annual Meeting, Washington, DC.

Vachon, M. L. S., Rogers, J., Lyall, W. A., Rogers, J., Lancee, W. J., Sheldon, A. R., & Freeman, S. J. (1982). Predictors and correlates of adaptation to conjugal bereavement. *American Journal of Psychiatry*, 137, 1380-1384.

Von Kroff, M., Ormel, J., Katon, W., & Lin, E. H. B. (1992). Disability and depression among high utilizers of health care. *Archives of General Psychiatry*, 49, 91-100.

Wells, K. B., Stewart, A., Hays, R. D., Burman, M. A., Rogers, W., Daniels, M., Berry, S., Greenfield, S., & Ware, J. (1989). The functioning and well-being of depressed patients. Results from the Medical Outcomes Study. *Journal of the American Medical Association*, 262, 914-919.

Wortman, C. B., Kessler, R. C., & Umberson, D. (1992). Widowhood and depression: Explaining long-term gender differences in vulnerability. *Journal of Health and Social Behavior*, 33, 10-24.

Wortman, C. B., & Silver, R. C. (1989). The myths of coping with loss. *Journal of Consulting and Clinical Psychology*, 57, 349-357.

Yesavage, J. A., Brink, T. L., Rose, T. L., Lum, O., Huang, V., Adey, M., & Leirer, V. O. (1983). Development and validation of a geriatric depression screening scale: A preliminary report. *Journal of Psychiatric Research*, 17, 37-49.

Zisook, S., Paulus, M., Shuchter, S. R., & Judd, L. L. (1997). The many faces of depression following spousal bereavement. *Journal of Affective Disorders*, 45, 85-94.

Zisook, S., & Shuchter, S. R. (1991). Early psychological reaction to the stress of widowhood. *Psychiatry*, 54, 320-332.

Zisook, S., Shuchter, S. R., Irwin, M., Darko, D. F., Sledge, P., & Resovsky, K. (1994). Bereavement, depression, and immune function. *Psychiatry Research*, 52, 1-10.

Direct reprint requests to:

Dale Lund
Gerontology Center
University of Utah
10 South 2000 East
Salt Lake City, UT 84112-5880
e-mail: dale.lund@nurs.utah.edu